Complete Summary

GUIDELINE TITLE

Acute colonic pseudo-obstruction.

BIBLIOGRAPHIC SOURCE(S)

Eisen GM, Baron TH, Dominitz JA, Faigel DO, Goldstein JL, Johanson JF, Mallery JS, Raddawi HM, Vargo JJ, Waring JP, Fanelli RD, Wheeler-Harbaugh J. Acute colonic pseudo-obstruction. Gastrointest Endosc 2002 Dec;56(6):789-92. [15 references]

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Acute colonic pseudo-obstruction (ACPO)

GUIDELINE CATEGORY

Evaluation
Management

CLINICAL SPECIALTY

Gastroenterology

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To provide recommendations for the evaluation and management of patients with acute colonic pseudo-obstruction (ACPO)

TARGET POPULATION

Patients with or suspected of having acute colonic pseudo-obstruction (ACPO)

INTERVENTIONS AND PRACTICES CONSIDERED

Evaluation/Management

Exclude mechanical obstruction

Conservative Therapy

1. Evaluation and parenteral correction of electrolyte and metabolic abnormalities (including phosphorous, magnesium, calcium, and thyroid functions)
2. Blood cultures and empiric antibiotics (if sepsis is suspected)
3. Nasogastric decompression (placement of a nasogastric tube)
4. Monitoring of roentgenographic progress by measuring cecal diameter
5. Discontinuation of narcotics, anticholinergic agents, and any other possible offending medications
6. Exclusion of abdominal infection
7. Mobilization out of bed
8. Appropriate medical and surgical management for significant concurrent illnesses
9. Optimal body positioning
10. Placement of a rectal tube, with or without prior use of limited tap water enemas
11. Physical examinations for tenderness or signs of peritonitis
12. Plain abdominal radiographs

Pharmacologic Therapy

1. Traditional prokinetic agents, such as erythromycin, metoclopramide, and cisapride (Note: not generally available at this time)
2. Neostigmine
3. Atropine (treatment of neostigmine toxicity)

Endoscopic Therapy

Mechanical decompression

1. Radiologic passage of decompression tubes under fluoroscopic guidance
2. Colonoscopic decompression with or without placement of a decompression tube (preferred)

3. Cecostomy by percutaneous, endoscopic, laparoscopic, and open surgical means

Surgical Decompression

1. Cecostomy
2. Percutaneous cecostomy
3. Colectomy

MAJOR OUTCOMES CONSIDERED

- Morbidity and mortality
- Resolution of acute colonic pseudo-obstruction (ACPO)
- Median time to resolution
- Recurrence

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

In preparing this guideline, a MEDLINE literature search was performed, and additional references were obtained from the bibliographies of the identified articles and from recommendations of expert consultants.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Guidelines for appropriate utilization of endoscopy are based on a critical review of the available data and expert consensus.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Not stated

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not applicable

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Recommendations are followed by evidence grades (A-C) identifying the type of supporting evidence. Definitions of the evidence grades are presented at the end of the "Major Recommendations" field.

Acute colonic pseudo-obstruction (ACPO) is characterized by massive colonic dilation in the absence of mechanical obstruction; synonyms include acute colonic ileus and Ogilvie's syndrome. Ischemia or perforation are the feared complications of ACPO; spontaneous perforation has been reported in 3 to 15% of patients with a mortality rate of 50% or higher. The rate of perforation and/or ischemia rapidly increases with cecal diameters >10 to 12 cm and when the duration of distention exceeds 6 days.

In evaluating a patient with signs or symptoms of suspected acute colonic dilation, mechanical obstruction should be excluded, because surgical management may be required. Although initial conservative management for mechanical obstruction overlays with the initial management of ACPO (e.g., nothing by mouth, intravenous fluids, nasogastric suction), the possibility of mechanical obstruction must always be considered, particularly if there is no response to conservative

management. If there is any suspicion of mechanical obstruction, a water soluble contrast enema of the rectum and distal colon should be obtained.

The causes of and predisposing factors associated with the development of ACPO are multiple (see table below). Often more than one of these factors are present. Most commonly, this syndrome is associated with intraperitoneal or extraperitoneal surgery. Multiple case reports and case-series have linked postoperative ACPO to pelvic surgery (i.e., orthopedic, gynecology, and urologic) and lumbar spine surgery.

Causes and predisposing factors associated with the development of ACPO

Postsurgical

- Intra-abdominal surgery
- Other surgical procedures
    - Lumbar/spinal and other orthopedic, gynecologic, urologic surgery

Trauma

- Retroperitoneal trauma
- Spinal cord injury

Medical

- Age
- Sepsis
- Neurologic disorders
- Hypothyroidism
- Viral infection (herpes, varicella zoster)
- Cardiac/respiratory disorders
- Electrolyte imbalances (hypokalemia, hypocalcemia, hypomagnesemia)
- Medications (narcotics, tricyclic anti-depressants, phenothiazides, anti-Parkinsonian drugs, anesthetic agents among others)
- Renal insufficiency

Based on LaPlace's law, increasing diameters accelerate the rise in tension experienced by the colon wall. Although risk does increase with expanding dimensions, there is only a poor association with absolute diameters. Animal and retrospective data suggest critical thresholds of 9 cm for the transverse colon and 12 cm for the cecum; however, many patients present with dimensions greater than this without sequelae. The acuity of onset and duration of persistent distention likely correlate with risk more strongly. Moreover, approximately 10% of patients have some degree of ischemia in the right colon at the time of colonoscopy. Spontaneous perforation has been estimated to occur in 3 to 15% of patients.

The patients' baseline state and prognosis for reversal of comorbidities should be incorporated into decisions regarding intervention for ACPO.

Conservative Therapy

The initial step in management of ACPO is to initiate therapy for potential contributing factors. Initial laboratory testing and management include an evaluation for electrolyte and metabolic abnormalities (including phosphorous, magnesium, calcium, and thyroid functions) with parenteral correction. Blood cultures and empiric antibiotics are indicated if sepsis is suspected clinically. The patient should be maintained with nothing by mouth, and nasogastric decompression should be initiated. Roentgenographic progress should be monitored by measuring cecal diameter. Management should include discontinuation of narcotics, anticholinergic agents, and any other possible offending medications, exclusion of abdominal infection, mobilization out of bed if feasible, and appropriate medical and surgical management for significant concurrent illnesses. The direct benefits of any individual component of care are unknown because these recommendations have not been studied as single interventions. A trial of conservative measures alone is appropriate in the subset of patients who lack significant abdominal pain, signs of peritonitis, and who have one or more potential underlying factors that are reversible.

Conservative management usually includes placement of a nasogastric tube for proximal gut decompression, aggressive use of optimal body positioning, and often, placement of a rectal tube, with or without prior use of limited tap water enemas. The prone position with hips elevated on a pillow or the knee chest position with the hips held high often aids the spontaneous evacuation of flatus. These positions should be alternated with right and left lateral decubitus positions regularly each hour, when feasible. When there is no pain and distention is not extreme (<12 cm) conservative measures can be used for 24 to 48 hours before entertaining overt medical or endoscopic intervention, particularly when reversible contributory factors are identified. During this interval, serial physical examinations for tenderness or signs of peritonitis should be performed and plain abdominal radiographs should be obtained every 12 to 24 hours. Serial laboratory tests such as complete blood cell count and electrolytes should be monitored. The reported success of conservative management is variable, with rates from 20 to 92%.

Pharmacologic Therapy

A variety of pharmacologic agents have been tried for active reversal of ACPO. There are anecdotal reports of success using traditional prokinetic agents such as erythromycin, metoclopramide, and cisapride. These suggest inconsistent responses, with only gradual improvement over 12 to 24 hours of therapy. Cisapride is generally not available at this time. Although it is relatively benign, erythromycin (250–500 mg, every 6 hours) has not been evaluated in randomized studies.

The only consistently positive results have been with neostigmine. Neostigmine is an anticholinesterase parasympathomimetic agent used for postoperative reversal of nondepolarizing neuromuscular blockade and in the treatment of myasthenia gravis and postoperative urinary retention. Parasympathetic stimulation can also induce bradycardia, asystole, hypotension, restlessness, seizures, tremor, miosis, bronchoconstriction, hyperperistalsis, nausea, vomiting, salivation, diarrhea, and sweating. Hence, acute administration must be accompanied by close monitoring

of cardiorespiratory status, including cardiac rhythm. Toxicity is treated with atropine, which should be immediately available. Contraindications to use of neostigmine include known hypersensitivity and mechanical urinary or intestinal obstruction. Recent myocardial infarction, acidosis, asthma, bradycardia, peptic ulcer disease, and therapy with beta-blockers are relative contraindications.

Endoscopic Therapy

Approaches to mechanical decompression have included radiologic passage of decompression tubes under fluoroscopic guidance, colonoscopic decompression with or without placement of a decompression tube, and cecostomy by percutaneous, endoscopic, laparoscopic, and open surgical means. Among the invasive therapeutic options, colonoscopic decompression is preferred and has been reported in many series, now totaling many hundreds of patients. Among those series with more than 20 cases, success at the initial procedure, with or without tube placement varied from 61 to 78%, recurrence varied from 18 to 33%, almost all among patients without tube placement, and ultimate clinical success after one or more procedures was 73 to 88%. Complications occurred in 0 to 4% of patients and in-hospital, but unrelated, mortality rates were 13 to 32%. It remains unclear whether ischemia is an absolute contraindication to proceeding with decompression. The efficacy of colonoscopic decompression has not been established in randomized clinical trials. Also, perforations have been described in up to 3% of patients undergoing colonoscopic decompression.

Surgical Decompression

Surgical management, with cecostomy or colectomy, generally carries greater morbidity than endoscopic decompression. It is therefore reserved for patients who fail endoscopic and pharmacologic efforts and for those in whom exploration, lavage, or drainage of the peritoneal cavity might otherwise be indicated. This includes patients with predisposing intra-abdominal processes as well as those with complications of free or contained perforation or peritonitis. Percutaneous cecostomy is also an option.

Summary

ACPO presents with features of large bowel obstruction, without a mechanical cause. It is thought to be due to an imbalance in the autonomic control of the colon. ACPO should initially be treated conservatively, while identifying and correcting potentially contributory metabolic, infectious, and pharmacologic factors (B). Active intervention is indicated for patients deteriorating during initial management and for those with signs or symptoms of ischemia, perforation, significant pain, fever, leukocytosis, or respiratory compromise (C). Most patients will respond to pharmacologic therapy with neostigmine, administered during close cardiovascular monitoring (A). Patients with contraindications to neostigmine and those failing or progressing despite pharmacologic management should be decompressed with more invasive methods, typically colonoscopy (B/C). Those with overt perforation or signs of peritonitis should generally be managed surgically. The only randomized controlled therapeutic trial for ACPO involves the use of neostigmine (A). Although it appears to be effective, there have not yet been any clinical trials directly comparing neostigmine with endoscopic decompression.

Clinical Bullets

- Conservative therapy is the preferred initial management for ACPO.
- Active intervention is indicated for patients at risk for perforation, failing conservative therapy.
- Neostigmine is effective in the majority of patients with ACPO as compared in a randomized clinical trial to placebo.
- In patients failing or having contraindications to neostigmine, colonoscopic, surgical, or radiologic intervention should be considered.

Definitions

A = Randomized controlled trial(s)
B = Observational studies only
C = Opinion or no data

CLINICAL ALGORITHM(S)

An algorithm for the evaluation and management of patients with suspected acute colonic dilation is provided in the original guideline document.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and classified for the recommendations using the following scheme:

A = Randomized controlled trial(s)
B = Observational studies
C = Opinion or no data

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate evaluation and management of acute colonic pseudo-obstruction (ACPO)

POTENTIAL HARMS

- Neostigmine. Parasympathetic stimulation can also induce bradycardia, asystole, hypotension, restlessness, seizures, tremor, miosis, bronchoconstriction, hyperperistalsis, nausea, vomiting, salivation, diarrhea, and sweating. Hence, acute administration must be accompanied by close monitoring of cardiorespiratory status, including cardiac rhythm. Toxicity is treated with atropine, which should be immediately available.
- The efficacy of colonoscopic decompression has not been established in randomized clinical trials. Also, perforations have been described in up to 3% of patients undergoing colonoscopic decompression.

- Surgical management, with cecostomy or colectomy, generally carries greater morbidity than endoscopic decompression.

CONTRAINDICATIONS

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- Contraindications to use of neostigmine include known hypersensitivity and mechanical urinary or intestinal obstruction. Recent myocardial infarction, acidosis, asthma, bradycardia, peptic ulcer disease, and therapy with beta-blockers are relative contraindications.
- It remains unclear whether ischemia is an absolute contraindication to proceeding with decompression.

QUALIFYING STATEMENTS

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- Further controlled clinical studies are needed to clarify aspects of this statement, and revision may be necessary as new data appear. Clinical consideration may justify a course of action at variance to these recommendations.
- The information in this guideline is intended only to provide general information and not as a definitive basis for diagnosis or treatment in any particular case. It is very important that individuals consult their doctors about specific conditions.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Clinical Algorithm

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Eisen GM, Baron TH, Dominitz JA, Faigel DO, Goldstein JL, Johanson JF, Mallery JS, Raddawi HM, Vargo JJ, Waring JP, Fanelli RD, Wheeler-Harbaugh J. Acute colonic pseudo-obstruction. Gastrointest Endosc 2002 Dec;56(6):789-92. [15 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2002 Dec

GUIDELINE DEVELOPER(S)

American Society for Gastrointestinal Endoscopy - Medical Specialty Society

SOURCE(S) OF FUNDING

American Society for Gastrointestinal Endoscopy

GUIDELINE COMMITTEE

Standards of Practice Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Committee Members: Glenn M. Eisen, MD (Chair); Todd H. Baron, MD; Jason A. Dominitz, MD; Douglas O. Faigel, MD; Jay L. Goldstein, MD; John F. Johanson, MD; J. Shawn Mallery, MD; Hareth M. Raddawi, MD; John J. Vargo, MD; J. Patrick Waring, MD; Robert D. Fanelli, MD (SAGES Representative); Jo Wheeler-Harbaugh, RN (SGNA Representative)

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available from the American Society for Gastrointestinal Endoscopy Web site.

Print copies: Available from the American Society for Gastrointestinal Endoscopy, 1520 Kensington Road, Suite 202, Oak Brook, IL 60523.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on October 15, 2004. The information was verified by the guideline developer on November 5, 2004.

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